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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,425	02/18/2004	Patrick A. Lichter	Q33.12-0012	3042

164 7590 01/08/2010

KINNEY & LANGE, P.A.
THE KINNEY & LANGE BUILDING
312 SOUTH THIRD STREET
MINNEAPOLIS, MN 55415-1002

EXAMINER	
JIAN, SHIRLEY XUEYING	

ART UNIT	PAPER NUMBER
3769	

MAIL DATE	DELIVERY MODE
01/08/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/781,425	LICHTER ET AL.	
	Examiner	Art Unit	
	SHIRLEY JIAN	3769	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39,62 and 63* is/are pending in the application.

4a) Of the above claim(s) *40-61* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-39,62 and 63* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/18/04, 4/27/04, 5/21/04, 7/7/04, 7/30/04, 9/20/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Acknowledgement

The Examiner acknowledges the Applicant's response to requirement for restriction and election, wherein the Applicant elects Group 1 and Species 9 (claims 1-39 and 62-63) without traverse; claims 40-61 are hereinafter withdrawn from examination.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-30 and 62-63 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 4, 8, 12, 16, 21, 26, 31, 37, 42, 50, 54, 58, 62, 66, 70, 74, 78, 82, 86, 90, 94, 98, 102, 106, 111, 115, 119, 128, 130, 135, 139, and 144 of U.S. Patent No. 6,159,147A and claims 1-7, 9-23, 26-28, 30-33, 35 and 36 of U.S. Patent No. 6,712,762 B1. The cited claims from U.S. Patent No. 6,159,147A and U.S. Patent No. 6,712,762 B1 contain claim languages which are obvious variants of "personal computer card interface" in the present application. Although the conflicting claims are not identical, they are not patentably distinct from each other because it would have been obvious to one of ordinary skill in the art at the time of the invention to implement the method of the patent in the manner set forth in the instant application since the claims of the instant application are merely broader renditions of the patented method.

Specification

The disclosure is objected to because of the following informalities: the specification is objected to as failing to provide proper antecedent basis for the claimed subject matter: "flexible connection" in claims 1, 4, 13, 20, 25, 28 and 29 and "hollow tube" in claims 4 and 28. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Appropriate correction is required.

Claim Objection

Claims 3, 6 and 27 are objected to because of the following informalities: "outputing" should be spelled "outputting." Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "flexible" in claims 1, 4, 13, 20, 25, 28 and 29 is a relative term which renders the claim indefinite. The term "flexible" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Currently, the broadest reasonable interpretation in light of the specification, the term "flexible" refers to the property of capable of being bent.

In addition, claims 1, 4, 13, 20, 25, 28 and 29 also recite the term "flexible connection." This terminology is not supported by the Specification. In light of the broadest reasonable interpretation, this terminology appears to refer to the "flexible air passageway" in the Specification. Claims 4 and 28 also recite the unsupported term "hollow tube." In light of the broadest reasonable interpretation, this terminology appears to refer to the "air tube" or "spirometry tube" in the Specification. The Applicant is advised to amend the claim as to maintain consistency between claim language and the Specification.

Note to Applicant Regarding Claim Interpretation

The word "adapted to" and "for" in the claim(s) may be interpreted as intended use. Intended use/functional language does not require that reference specifically teach the intended use of the element. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then the prior art properly rejects the broadest reasonable interpretation of the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-15, 17-39 and 62-63 are rejected under 35 U.S.C. 102(e) as being anticipated by Cherry et al. US Patent No. 5,701,894 (hereinafter Cherry) cited in the Applicant's IDS.

1. A portable biological data collection system comprising:

a biological data sensor for engaging a patient for sensing biological data from the patient (Figs. 9-20, col.4, ll.8-20 and col.10, ll.14-28, various sensors including electrodes for measuring respiration 82); and

a portable biological data collection device (col.6, ll.11-25, Compcorder 9, portable apparatus comprising various plug-in modules) connected to the biological data sensor by a flexible connection (col.5, ll.36-47, col.6, ll.11-25, col.10, ll.14-28, col.12, ll.65-col.13, ll.30, col.345-col.16.ll.32, Holter ECG cables are flexible electrode channel), the portable biological data collection device comprising:

an amplifier for amplifying the sensed biological data from the biological data sensor to produce an amplified signal (col.5,ll.56-57 and col.5, ll.62-col.6, ll.9, signal amplifiers 14);

an analog-to-digital converter for digitizing the amplified signal to produce a digitized signal (col.8, ll.43-64, A/D converter 52); and

a personal computer card interface (Fig.5, microprocessor 10) for relaying the digitized signal to a host computer on a real-time basis as the biological data is sensed by the biological data sensor (col.5, ll. 31-47, real time signal output; also see col.10, ll.42-54 and Fig.4, Compcorder comprises outputs model output 106, printer output 108 and RS-232 link 110, these outputs are capable of outputting information and supplying power between host and portable devices on a real-time basis), and for supplying electrical power from the host computer to the amplifier and the analog-to-digital converter (col.5, ll.47-61 and col.6, ll.26-49 power module/PM 60 supplies power to all Compcorder functions).

2. The portable biological data collection system of claim 1, wherein the portable biological data collection device further comprises a personal computer card housing (Figs. 3, 5 and 6: housing 81), wherein the amplifier, the analog-to-digital converter, and the personal computer card

interface are disposed within the personal computer card housing (col.9, ll.64-col.10, ll.62, housing 81 provides housing for converter 52, amplifiers 14, and microprocessor 10).

3. The portable biological data collection system of claim 2, wherein the portable biological data collection device further comprises:

an analog-to-digital timing circuit (Fig.5 A/D converters 52) disposed within the personal computer card housing for communicating with the analog-to-digital converter for producing a sampling timing signal (col.7, ll.26-37; A/D converter comprises a timing circuit to make a conversion approximately every 8 millisecond's at 128 samples per second); and

a storage buffer (RAM 38, RMM/memory module 16) disposed within the personal computer card housing for receiving the digitized signal from the analog-to-digital converter for outputting the digitized signal (col.7, ll.26-37 and col.7, ll.51-col.8, ll.2; converted samples are stored in the buffer of static RAM 38, then transferred to RMM 16);

wherein the personal computer card interface supplies electrical power from the host computer to the analog-to-digital timing circuit and the storage buffer (col.3, ll.11-20, col.5, ll.47-61, col.9, ll.64-col.10, ll.13, power supply; also see Fig.3 power unit insert 60 and battery compartment 83).

4. The portable biological data collection device of claim 1, wherein the flexible connection comprises a hollow tube (col.5, ll.36-47, col.6, ll.11-25, col.10, ll.14-28, col.12, ll.65-col.13, ll.30, col.345-col.16.ll.32, the Examiner interprets Holter ECG cables as flexible and hollow electrode channel, because all cables- unless solid- are considered hollow to an extent, this is

sufficient to reject a hollow tube).

5. The portable biological data collection system of claim 4, wherein the portable biological data collection device further comprises a personal computer card housing (Figs. 3, 5 and 6: housing 81), wherein the amplifier, the analog-to-digital converter, and the personal computer card interface are disposed within the personal computer card housing (col.9, ll.64-col.10, ll.62, housing 81 provides housing for converter 52, amplifiers 14, and microprocessor 10).

6. The portable biological data collection system of claim 5, wherein the portable biological data collection device further comprises:

an analog-to-digital timing circuit (Fig.5 A/D converters 52) disposed within the personal computer card housing for communicating with the analog-to-digital converter for producing a sampling timing signal (col.7, ll.26-37; A/D converter comprises a timing circuit to make a conversion approximately every 8 millisecond's at 128 samples per second); and

a storage buffer (RAM 38, RMM/memory module 16) disposed within the personal computer card housing for receiving the digitized signal from the analog-to-digital converter for outputting the digitized signal (col.7, ll.26-37 and col.7, ll.51-col.8, ll.2; converted samples are stored in the buffer of static RAM 38, then transferred to RMM 16);

wherein the personal computer card interface supplies electrical power from the host computer to the analog-to-digital timing circuit and the storage buffer (col.3, ll.11-20, col.5, ll.47-61, col.9, ll.64-col.10, ll.13, power supply; also see Fig.3 power unit insert 60 and battery

compartment 83).

7. The portable biological data collection system of claim 4, wherein the biological data sensor comprises a gas composition sensor (col.13, ll.31-38, col.14, ll.62-col.15, ll.12, gas saturation sensor 79).

8. The portable biological data collection system of claim 7, wherein the gas composition sensor comprises a breath composition sensor (col.13, ll.31-38, col.14, ll.62-col.15, ll.12, gas/ oxygen/ carbon dioxide saturation sensor 79).

9. The portable biological data collection system of claim 7, wherein the biological data sensor is selected from a group consisting of a nitrogen sensor, an oxygen sensor, a hydrogen sensor, a carbon dioxide sensor, a carbon monoxide sensor, and an alcohol sensor (col.13, ll.31-38, col.14, ll.62-col.15, ll.12, gas/ oxygen/ carbon dioxide saturation sensor 79).

10. The portable biological data collection system of claim 4, wherein the biological data sensor comprises a mouthpiece (Fig.20 and col.17, ll.7-14, gas saturation sensor, a person exhales from a mouth or nose, a sensor for measuring a person's exhale composition is sufficient to reject a mouthpiece).

11. The portable biological data collection system of claim 4, wherein the biological data sensor is a non-invasive sensor (Figs. 9-13 and Figs.15-20 various non-invasive sensors).

12. The portable biological data collection system of claim 4, wherein the biological data sensor is an invasive sensor (Fig.14, and col.16, ll.37-54. pH sensor is an invasive sensor which contains a glass probe for inserting down the throat to measure the pH levels of the stomach liquids).

13. The portable biological data collection system of claim 1, wherein the flexible connection comprises an electrical connection (col.5, ll.36-47, col.6, ll.11-25, col.10, ll.14-28, col.12, ll.65-col.13, ll.30, col.345-col.16.ll.32, Holter ECG cables are flexible electrode channel which supply a electrical voltage to the electrodes).

14. The portable biological data collection system of claim 13, wherein the portable biological data collection device further comprises a personal computer card housing (Figs. 3, 5 and 6: housing 81), wherein the amplifier, the analog-to-digital converter, and the personal computer card interface are disposed within the personal computer card housing (col.9, ll.64-col.10, ll.62, housing 81 provides housing for converter 52, amplifiers 14, and microprocessor 10).

15. The portable biological data collection system of claim 14, wherein the portable biological data collection device further comprises:

an analog-to-digital timing circuit (Fig.5 A/D converters 52) disposed within the personal computer card housing for communicating with the analog-to-digital converter for producing a

sampling timing signal (col.7, ll.26-37; A/D converter comprises a timing circuit to make a conversion approximately every 8 millisecond's at 128 samples per second); and

a storage buffer disposed within the personal computer card housing for receiving the digitized signal from the analog-to-digital converter for outputting the digitized signal (col.7, ll.26-37 and col.7, ll.51-col.8, ll.2; converted samples are stored in the buffer of static RAM 38, then transferred to RMM 16);

wherein the personal computer card interface supplies electrical power from the host computer to the analog-to-digital timing circuit and the storage buffer (col.3, ll.11-20, col.5, ll.47-61, col.9, ll.64-col.10, ll.13, power supply; also see Fig.3 power unit insert 60 and battery compartment 83).

17. The portable biological data collection system of claim 13, wherein the biological data sensor is selected from a group consisting of a pulse oximetry sensor, a temperature sensor, a blood pressure sensor, an electrocardiography sensor, an electroencephalography sensor, an echocardiography sensor, a Doppler sensor, a respiratory rate sensor, a pulse rate sensor, a bio-impedance sensor, a blood glucose sensor, a blood cholesterol sensor, a motion sensor, a sound sensor, a heart beat sensor, a weight sensor, an electromyography sensor, an electro-oculogram sensor, and a body fluid sensor (Figs.9-20, col.15, ll.25-col.18, ll.15, ECG sensor 70, EEG sensor 72, EOG sensor 74, EMG sensor 76, blood pressure sensor 86, temperature sensor 80, activity sensor 75 and 90).

18. The portable biological data collection device of claim 17, wherein the electrocardiography

sensor is selected from a group consisting of a resting electrocardiography sensor, a 24-hour electrocardiography sensor, a stress testing electrocardiography sensor, a signal averaging electrocardiography sensor, an event ECG electrocardiography sensor, and a heart-rate variability electrocardiography sensor (col.13, ll.19-38, col.15, ll.34-65, real time/continuous measuring of ECG sensors).

19. The portable biological data collection system of claim 13, wherein the biological data sensor is adapted to be in contact with skin of the patient (see Figs. 6-13 and Figs.15-20, sensors are adapted to contact a user's skin).

20. The portable biological data collection system of claim 19, wherein the portable biological data collection device further comprises electrical isolation circuitry disposed between the flexible connection and the amplifier for electrically isolating a patient from the electrical power (col.13, ll.19-38, col.15, ll.34-65, electrical isolation to prevent electric shock).

21. The portable biological data collection system of claim 19, wherein the biological data sensor is adapted to be in contact a fingertip of the patient (see Figs. 6-13 and 15-20, sensors are capable of contacting a user's fingertip because the sensors are adapted to contact a user's skin, a fingertip comprises skin).

22. The portable biological data collection system of claim 13, wherein the biological data sensor is a non-invasive sensor (Figs. 9-13 and Figs.15-20 various non-invasive sensors).

23. The portable biological data collection system of claim 13, wherein the biological data sensor is an invasive sensor (Fig.14, and col.16, ll.37-54. pH sensor is an invasive sensor which contains a glass probe for inserting down the throat to measure the pH levels of the stomach liquids).

24. The portable biological data collection system of claim 1, wherein the personal computer card interface relays designation data to the host computer for allowing the host computer to identify the biological data to be collected (col.7, ll.51-42, Compcorder 9 relays collected data to the host computer 24 via the PCMCIA connection port 15).

25. A portable biological data collection system comprising:

a plurality of biological data sensors adapted to engage with a patient for sensing biological data from the patient (Figs. 9-20, col.4, ll.8-20 and col.10, ll.14-28, various sensors including electrodes for measuring respiration 82); and

a portable biological data collection device (col.6, ll.11-25, Compcorder 9, portable apparatus comprising various plug-in modules) connected to the biological data sensors by a plurality of flexible connections (col.6, ll.11-25, Holter ECG cables are flexible), the portable biological data collection device comprising:

an amplifier for amplifying the sensed biological data from the biological data sensors to produce amplified signals (col.5,ll.56-57 and col.5, ll.62-col.6, ll.9, signal amplifiers 14);

an analog-to-digital converter for digitizing the amplified signals to produce digitized signals (col.8, ll.43-64, A/D converter 52); and

a personal computer card interface for relaying the digitized signals to a host computer on a real-time basis as the biological data is sensed by the biological data sensors (col.5, ll. 31-47, real time signal output; also see col.10, ll.42-54 and Fig.4, Compcorder comprises outputs model output 106, printer output 108 and RS-232 link 110, these outputs are capable of outputting information and supplying power between host and portable devices on a real-time basis), and for supplying electrical power from the host computer to the amplifier and the analog-to-digital converter (col.5, ll.47-61 and col.6, ll.26-49 power module/PM 60 supplies power to all Compcorder functions).

26. The portable biological data collection system of claim 25, wherein the portable biological data collection device further comprises a personal computer card housing (Figs. 3, 5 and 6: housing 81), wherein the amplifier, the analog-to-digital converter, and the personal computer card interface are disposed within the personal computer card housing (col.9, ll.64-col.10, ll.62, housing 81 provides housing for converter 52, amplifiers 14, and microprocessor 10).

27. The portable biological data collection system of claim 26, wherein the portable biological data collection device further comprises:

an analog-to-digital timing circuit (Fig.5 A/D converters 52) disposed within the personal computer card housing for communicating with the analog-to-digital converter for producing a

sampling timing signal (col.7, ll.26-37; A/D converter comprises a timing circuit to make a conversion approximately every 8 millisecond's at 128 samples per second); and

a storage buffer disposed within the personal computer card housing for receiving the digitized signals from the analog-to-digital converter for outputting the digitized signals (col.7, ll.26-37 and col.7, ll.51-col.8, ll.2; converted samples are stored in the buffer of static RAM 38, then transferred to RMM 16);

wherein the personal computer card interface supplies electrical power from the host computer to the analog-to-digital timing circuit and the storage buffer (col.3, ll.11-20, col.5, ll.47-61, col.9, ll.64-col.10, ll.13, power supply; also see Fig.3 power unit insert 60 and battery compartment 83).

28. The portable biological data collection system of claim 26, wherein at least one of the plurality of flexible connections comprises a hollow tube (col.6, ll.11-25, Holter ECG cables are flexible and hollow because all cables- unless solid- are considered hollow to an extent, this is sufficient to reject a hollow tube).

29. The portable biological data collection system of claim 26, wherein at least one of the plurality of flexible connections comprises an electrical connection (col.5, ll.36-47, col.6, ll.11-25, col.10, ll.14-28, col.12, ll.65-col.13, ll.30, col.345-col.16.ll.32, Holter ECG cables are flexible electrode channel which supply a electrical voltage to the electrodes).

30. The portable biological data collection system of claim 25, wherein the personal computer

card interface relays designation data to the host computer for allowing the host computer to identify the biological data to be collected for each of the plurality of biological data sensors (col.7, ll.51-42, Compcorder 9 relays collected data to the host computer 24 via the PCMCIA connection port 15).

31. A portable biological data collection device comprising:

a biological data sensor adapted to be placed into close proximity with a patient for sensing biological data from the patient (col.6, ll.11-25, Compcorder 9, portable apparatus comprising various plug-in modules including ECG sensors);

an amplifier for amplifying the sensed biological data from the biological data sensor to produce an amplified signal (col.8, ll.43-64, A/D converter 52);

an analog-to-digital converter for digitizing the amplified signal to produce a digitized signal (col.8, ll.43-64, A/D converter 52); and

a personal computer card interface (Fig.5, microprocessor 10) for relaying the digitized signal to a host computer on a real-time basis as the biological data is sensed by the biological data sensor (col.5, ll. 31-47, real time signal output; also see col.10, ll.42-54 and Fig.4, Compcorder comprises outputs model output 106, printer output 108 and RS-232 link 110, these outputs are capable of outputting information and supplying power between host and portable devices on a real-time basis), and for supplying electrical power from the host computer to the amplifier and the analog-to-digital converter (col.5, ll. 31-47, real time signal output; also see col.10, ll.42-54 and Fig.4, Compcorder comprises outputs model output 106, printer output 108 and RS-232 link 110, these outputs are capable of outputting information and supplying power

between host and portable devices on a real-time basis).

32. The portable biological data collection device of claim 31 further comprising a personal computer card housing (Figs. 3, 5 and 6: housing 81), wherein the amplifier, the analog-to-digital converter, and the personal computer card interface are disposed within the personal computer card housing (col.9, ll.64-col.10, ll.62, housing 81 provides housing for converter 52, amplifiers 14, and microprocessor 10).

33. The portable biological data collection device of claim 31, wherein the amplifier is disposed on the biological data sensor (col.15, ll.34-45, amplifiers 14).

34. The portable biological data collection device of claim 33 further comprising a personal computer card housing (Figs. 3, 5 and 6: housing 81), wherein the analog-to-digital converter, and the personal computer card interface are disposed within the personal computer card housing (col.9, ll.64-col.10, ll.62, housing 81 provides housing for converter 52, amplifiers 14, and microprocessor 10).

35. The portable biological data collection device of claim 33, wherein the analog-to-digital converter is disposed on the biological data sensor (col.15, ll.34-45 A/D converter 52).

36. The portable biological data collection device of claim 35 further comprising a personal computer card housing (Figs. 3, 5 and 6: housing 81), wherein the personal computer card

interface is disposed within the personal computer card housing (col.9, ll.64-col.10, ll.62, housing 81 provides housing for converter 52, amplifiers 14, and microprocessor 10).

37. The portable biological data collection device of claim 33 further comprising a filter disposed on the biological data sensor for filtering the amplified signals from the amplifier (col.15, ll.34-45, filters 45).

38. The portable biological data collection device of claim 31 further comprising electrical isolation circuitry disposed on the biological data sensor for electrically isolating a patient from the electrical power (col.13, ll.19-38, col.15, ll.34-65, electrical isolation to prevent electric shock).

39. The portable biological data collection device of claim 31 further comprising a defibrillator protector disposed on the biological data sensor for providing electrical protection to the portable biological data collection device (col.13, ll.19-38, col.15, ll.34-65, electrical isolation prevents electrical signals or static to get into the recorder device in order to prevent potential damage).

62. A portable biological data collection system comprising:

a biological data sensor (ECG sensors) for engaging a patient for sensing biological data from the patient (col.6, ll.11-25, Compcorder 9, portable apparatus comprising various plug-in modules including ECG sensors); and

a portable biological data collection device (Compcorder 9) for receiving the biological data from the biological data sensor, the portable biological data collection device (col.6, ll.11-25, Compcorder 9, portable apparatus comprising various plug-in modules including ECG sensors) comprising:

signal-conditioning circuitry for receiving the biological data and for producing a digitized signal (col.7, ll.26-37 and col.15, ll.34-65 signal conditioning amplifiers and filters prepare the analog signal for conversion to digital by the converter); and

a personal computer card interface (Fig.5, microprocessor 10) for relaying the digitized signal to a host computer on a real-time basis as the biological data is sensed by the biological data sensor (col.5, ll. 31-47, real time signal output; also see col.10, ll.42-54 and Fig.4, Compcorder comprises outputs model output 106, printer output 108 and RS-232 link 110, these outputs are capable of outputting information and supplying power between host and portable devices on a real-time basis), for supplying electrical power from the host computer to the amplifier and the analog-to-digital converter (col.5, ll. 31-47, real time signal output; also see col.10, ll.42-54 and Fig.4, Compcorder comprises outputs model output 106, printer output 108 and RS-232 link 110, these outputs are capable of outputting information and supplying power between host and portable devices on a real-time basis), and for relaying designation data to the host computer for allowing the host computer to identify the biological data to be collected (col.7, ll.51-42, Compcorder 9 relays collected data to the host computer 24 via the PCMCIA connection port 15).

63. The portable biological data collection system of claim 62, wherein the portable biological

data collection device further comprises a personal computer card housing (Figs. 3, 5 and 6: housing 81), wherein the signal-conditioning circuitry and the personal computer card interface are disposed within the personal computer card housing (Fig. 9 and col.7, ll.26-37 and col.15, ll.34-65, signal conditioning circuitry and microprocessor are stored within Compcorder 9 with housing 81).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cherry in view of Squires et al. US Patent No. 4,216,779.

Regarding claim 16, Cherry teaches the biological data collection system of claims 1 and 13 comprising a plurality of sensors biological sensors including a blood pressure sensor 86 (col.4, ll.7-19 and col.16, ll.33-38) and wherein a plurality of plug and play modules can be attached to further enhance sensor options (col.5, ll.26-34), but does not teach wherein the biological data sensor comprises at least one microphone. However Squires, a prior art reference in analogous art teaches a portable monitoring and recording device comprising a plurality of sensor including a blood pressure monitoring unit comprising a microphone (see Fig. 1, as well as col.9, ll.46-53). It would have been obvious to one of ordinary skill in the art at the time of the invention to replace Cherry's blood pressure sensor with Squire's blood pressure monitoring unit

because Cherry notes that Squire's blood pressure apparatus is an alternative measuring device (Cherry: col.16, ll.33-38). Portable biological data collection device of claims 1, an

Claims 4-12 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cherry in view of Orr et al. US Patent No. 5,347,843 (hereinafter Orr).

Note to Applicant: Claims 4-12 and 28 are rejected above under 35 USC § 102 (see above), and here as an alternative.

Regarding claim 4, Cherry teach the portable biological data collection device of claim 1 comprising a flexible connection (see claim 1 above), and further teaches wherein the portable collection device is adapted to collect different physiological parameters by connecting with various "plug and play" signal conditioner modules including a gas saturation sensor 79 and respiration effort belt 82 (col.5, ll.26-47, col.13, ll.31-39), Cherry does not distinctively teach wherein the flexible connection is a hollow tube. However Orr, a prior art reference in the spirometry art, teaches a pressure differential flowmeter comprising a respiration tube 12 (Orr: Fig.1) for collecting the patient's exhale contents. The flowmeter is further connected to a computer signal processing system similar to the portable biological data collection system and host system taught by Cherry (Orr: col.3, ll.28-col.4, ll.8). It would have been obvious to one of ordinary skill in the art at the time of the invention to substitute Cherry's gas saturation sensor with Orr's pressure differential flowmeter as taught by Orr because a flowmeter measures respiratory flow and supplements Cherry's respiration effort sensor 82 to give a comprehensive understanding of a patient's respiration.

Claims 5-12 are rejected under Cherry as applied above under 35 USC § 102.

Claim 28 is rejected under Cherry and Orr, essentially under the same reasoning as applied to claim 4.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Gallant et al. US Patent No.5,309,920, a =b ambulatory patient monitoring system is provided for measuring and storing predetermined diagnostic parameters of a patient (see Fig.1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHIRLEY JIAN whose telephone number is (571)270-7374. The examiner can normally be reached on Monday-Friday 10am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hank Johnson can be reached on 571-272-4768. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SHIRLEY JIAN/
Examiner, Art Unit 3769

/Henry M. Johnson, III/
Supervisory Patent Examiner, Art Unit 3769

December 30, 2009